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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/537,661

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466 7590 09/29/2009

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EXAMINER

LE, DINH THANH

ART UNIT

PAPER NUMBER

2816

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09/29/2009

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/537,661	<b>Applicant(s)</b> ITO ET AL.	
	<b>Examiner</b> DINH T. LE	<b>Art Unit</b> 2816	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 17 June 2009.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 25-30,32-35,38,39,41,42,44 and 45 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 25-30,32-35,38,39,41,42,44 and 45 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

***FINAL REJECTION***

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 25-30, 32-35, 38-39, 41-42 and 44-45 are rejected under 35 USC 103 (a) as being unpatentable over Suematsu (JP10-145143) in view of Shino et al (JP2000-228602) and further in view of Higgins et al (US 5,373,264).

Regarding claims 25, 28 and 38-39, Suematsu discloses in Figures 2-3 a circuit comprising:

- transistor (11);
- a capacitor (23, 32) coupled for adjusting the negative impedance.
- distributed lines (T1, T7, 12) being coupled to the transistor (11); and
- a bias power source (21) for supplying said gate with a predetermined DC voltage.

However, Suematsu fails to suggest that the transistor (11) is the FET, the distributed line (12) comprise two parallel lines and an inductor coupled between an output terminal and ground for adjusting the negative resistance value

Nevertheless, Shino et al suggest in Figures 1-4 an inductor comprising two parallel lines (4- 5) for facilitating frequency regulation, see the Abstract.

Higgins, Jr. suggests in Figures 1- 4 to connect a capacitor (28a, 28b, 40a, 40b) and inductor (16', 26) between one terminal of the transistor (12) and ground for adjusting the negative resistance value.

It would have been obvious to a person having skill in the art at the time the invention was made to replace the line (12) of Suematsu with two parallel lines as suggested by Shino et al for the purpose of facilitating frequency regulation, and employ the capacitor and inductor as suggested by Higgins, Jr. in the modified circuit of Suematsu for the purpose of adjusting the negative resistance value. Also, it is well known in the art that the FET performs the same function as the bipolar transistor with the exception of that the FET consumes less power than the bipolar transistor. Thus, employing the FET in the circuit of Suematsu for reducing power consumption is considered to be a matter of an electrical design expedient for an engineer that would have been obvious at the time of the invention.

Regarding claims 26-27, 29-30 and 32-35, since the modified circuit of Suematsu is a high frequency circuit, all components such as inductors and capacitors would be formed with the distributed lines and the dimension of the lines determines the capacitance and inductance values. Thus, selecting the length and width for the lines as claimed is considered to be a matter of a design expedient for an engineer depending upon the particular application in which the circuit of Suematsu is to be used. Lacking of showing any criticality, it would have been obvious to a person having skill in the art at

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the time the invention was made to select the length for the lines of the modified circuit of Suematsu as claimed for the purpose of providing a predetermined inductance value in order to accommodate with a frequency plan of a predetermined system.

Regarding claims 41-42, wherein unmarked resistors in box (21) is coupled to the base and a DC voltage for biasing the transistor (11).

Regarding claims 44-since the circuit of Suematsu can be used in a predetermined filter circuit it inherently connected to a resonator of the predetermined filter circuit since it is the negative resistance circuit.

### ***Response to Applicant's Arguments***

The applicant argues that the output of the circuit of the admitted prior art is not taken at the gate of the transistor. The arguments are moot without traverse; however, this limitation is suggested by Suematsu as stated above.

### ***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not

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mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to DINH T. LE whose telephone number is (571) 272-1745.

The examiner can normally be reached on Monday-Friday (8AM-7PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lincoln Donovan, can be reached at (571) 272-1988.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/DINH T. LE/

Primary Examiner, Art Unit 2816